

## **REMARKS**

In the Office Action dated February 24, 2006, claims 1-14 and 17-22 are pending. The Examiner has made the Restriction Requirement final and has indicated that claims 1-8 and 17-20 are withdrawn from further consideration. Claims 9-14 are under examination and are rejected.

This Response addresses each of the Examiner's rejections. Applicants therefore respectfully submit that the present application is in condition for allowance. Favorable consideration of all pending claims is therefore respectfully requested.

In the first instance, Applicants observe that claims 21-22 are also pending, and the Examiner has not commented on these claims in the Office Action or in the Restriction Requirement.

Claims 9-14 are rejected under 35 U.S.C. §112, second paragraph as allegedly indefinite. Claim 9 recites a DNA microarray. The Examiner states that it is unclear as to whether the array includes immobilized DNA material.

Applicants respectfully submit that claim 9 has been amended to incorporate the language of claim 10, which delineates that the nucleic acid probe is immobilized on an inner wall of each of said channels. Claim 10 has been canceled without prejudice. Applicants respectfully submit that claim 9, as presently amended, is not indefinite. Withdrawal of the rejection of claim 9 under 35 U.S.C. §112, second paragraph, is respectfully requested.

Claims 9-14 are rejected under 35 U.S.C. §102(e) as allegedly anticipated by U.S. Patent No. 6,676,904 (Lee et al.).

According to the Examiner, the Lee et al. patent discloses an apparatus for the fluorescent measurement of a plurality of microarrays. The apparatus is generally disclosed for

performing a variety of binding assays including, DNA and RNA, which involves fluorescent labeling. The arrays are formed on a microporous membrane, and different binding agents, preferably different DNA oligonucleotides probes are immobilized to the membrane in an array format. A variety of DNA samples can be contacted with each of the arrays in a fluid manifold.

Applicants respectfully submit that independent claim 9 has been amended to include a "temperature regulating section" in the claimed apparatus. Claims 11-14 all depend, directly or indirectly, upon claim 9. Support for an apparatus having a "temperature regulating section" is found in the specification, e.g., on page 9, lines 20-23, page 10, lines 10-19, and page 33, lines 20-26. No new matter is introduced.

Applicants further submit that with the apparatus of the present invention, the reaction and measurement can be carried out at the same time. Thus, the instant apparatus is able to provide the results of an assay quickly. As the reaction temperature affects the binding assay carried out in the apparatus of the present invention, the temperature regulating section in the present apparatus makes it possible to obtain more meaningful and consistent assay results.

Applicants respectfully submit that the Lee et al. patent does not disclose or even suggest an apparatus having a temperature regulating section. A rejection of a claim under 35 U.S.C. §102 requires that the single prior art reference discloses every element of the claim. It is axiomatic that there can be no differences between the subject matter of the claim and the disclosure of the prior art. The absence from the reference of any claimed element negates anticipation. Kloster Speedsteel AB v Crucible Inc., 793 F.2d 1565, 1571, 230 USPQ 81, 84 (Fed. Cir. 1986). Accordingly, Applicants respectfully submit that the Lee et al. patent does not anticipate the invention as presently claimed. Withdrawal of the rejection of claims 9-14 under 35 U.S.C. §102(e) is respectfully requested.

Claims 9-14 are rejected under 35 U.S.C. §103(a) as allegedly unpatentable over U.S. Publication No. 2004/0137604 (Goodman et al.) in view of U.S. Patent No. 6,345,115 (Ramm et al.).

According to the Examiner, Goodman et al. disclose the use of a genosensor device, which is a microporous substrate comprising a plurality of three-dimensional microarrays that allow for multiple DNA assay to be carried out in parallel so that a multiplicity of individual and simultaneous binding reactions occur. The Examiner concedes that the reference is silent as to an image display, although all computers have displays or an image processing section, which determines the intensity of the optical signal. Further, the Examiner contends that Ramm et al. disclose a system for performing image intensity analysis specifically for DNA microchip hybridization assays. Accordingly, the Examiner concludes that it would have been obvious to one skilled in the art to use the computer control, detection and analysis system described by Ramm et al., in the system and method disclosed by Goodman et al., in view of the use of the Ramm et al. system for hybridization assays.

Applicants respectfully submit that independent claim 9 has been amended to include a temperature regulating section and an X-Y stage in the claimed apparatus. An X-Y stage permits the change of the position of a visual field observed using a microscope. Support for an apparatus having an X-Y stage is found in the specification, e.g., on page 9, lines 12-16, and page 30, lines 6-23. No new matter is introduced.

With a temperature regulating section and an X-Y stage, the presently claimed apparatus can perform an assay and obtain the results within a very short period of time. In particular, the X-Y stage in the claimed apparatus makes it possible to process a plurality of arrays simultaneously, and therefore the reaction and detection can be carried out more quickly.

Applicants further respectfully submit that neither Goodman et al. nor Ramm et al. disclose or remotely suggest an apparatus as presently claimed, which has a temperature regulating section and an X-Y stage. Therefore, Applicants respectfully submit that the references, taken singularly or in combination, do not render the claimed invention obvious. Withdrawal of the rejection of claims 9-14 under 35 U.S.C. §103(a) is therefore respectfully requested.

Finally, claim 11 has also been amended. Support for the amendment to claim 11 is found in original claim 11 filed in the present application. No new matter is introduced.

In view of the foregoing amendments and remarks, it is firmly believed that the subject application is in condition for allowance, which action is earnestly solicited.

Respectfully submitted,



Xiaochun Zhu

Registration No. 56,311

SCULLY, SCOTT, MURPHY & PRESSER, P. C.  
400 Garden City Plaza-STE 300  
Garden City, New York 11530  
(516) 742-4343  
XZ:ab